Pipeline

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Small Community Wastewater Issues Explained to the Public

Paying for Onsite System Management

Environmental officials and community leaders agree—septic systems and other onsite wastewater treatment systems must be properly designed, installed, operated, and maintained to function correctly. In this way, small onsite systems that serve individual homes are no different than large centralized wastewater facilities serving entire communities.

But unlike large community systems, individual home onsite wastewater systems have no operator to monitor them and no staff to keep records or perform regular maintenance. In most communities, it is up to system owners to initiate maintenance.

Unfortunately, some owners neglect their systems until they malfunction or create a public nuisance. By the time onsite system problems become noticeable, they already may be a threat to public health and the environment.

Onsite System Management to the Rescue

To protect residents and local water resources, small communities across the country are finding ways to centrally manage their onsite wastewater systems.

Onsite system management can take many forms. Some communities oversee many stages of system design, installation, and maintenance. Some go as far as taking complete responsibility for, or ownership of, all onsite systems in their jurisdiction. But more often, communities choose less comprehensive programs. For example, they may combine system permit programs with homeowner education or offer homeowners incentives for maintaining their systems.

Money Shouts

Although it is important that communities have the flexibility to design onsite management programs to suit their needs, money often is the determining factor. Small communities that might benefit from comprehensive onsite system management may not even consider such programs due to costs.

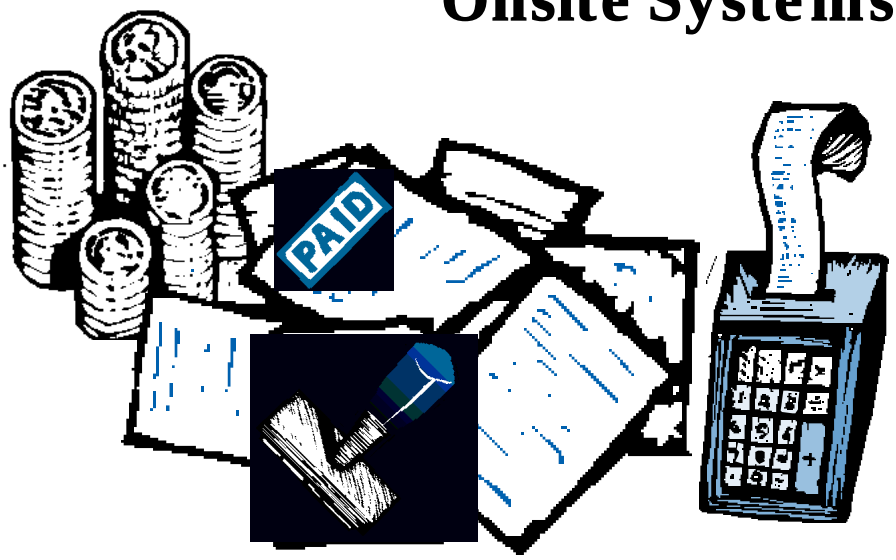
However, protecting public health and local water resources always is a good investment, and there are ways that even the smallest communities can afford to provide onsite system management for their residents.

This *Pipeline* issue discusses several ways communities fund onsite system management programs, such as loans, grants, bonds, and user fees. Much of the information is based upon a draft of the U.S. Environmental Protection Agency manual, *Onsite Wastewater Treatment Systems Manual*, which will be published in 2002. Look for announcements in *Pipeline* and the *Small Flows Quarterly* magazine when the manual becomes available.

Readers are encouraged to reprint *Pipeline* articles in flyers, newspapers, newsletters, or educational presentations. Please include the National Small Flows Clearinghouse's (NSFC) name and phone number on the reprinted information, and send us a copy for our files.

If you have questions about reprinting articles or about any of the topics discussed in this newsletter, please contact the NSFC at (800) 624-8301 or (304) 293-4191.

How Can Communities Afford To Manage Onsite Systems?



With all the financial demands on a small community's budget, how can it possibly afford to manage the many septic systems and other onsite wastewater systems in its jurisdiction? And how can homeowners, many in rural and low-income areas, possibly afford to help?

The truth is that most communities already provide some form of onsite system management for their residents. For example, system owners usually pay a permit fee to a local health agency or community government. This fee typically goes toward the site evaluation and permitting costs for their system.

Communities also often use state money, property assessments, and health district taxes to help fund and enforce local environmental and public health programs. However, individual property owners normally bear the costs for system installation, operation, inspection, maintenance, and repairs themselves. Few community health agencies have the resources to regularly follow up with systems after they've been installed.

But the days of ignoring onsite systems after they have been put in the ground are ending. Communities both large and small now recognize the need for comprehensive and ongoing system management. Residents are becoming more aware of the problem of malfunctioning onsite systems and are looking to local officials to help protect public health and the environment as well as the value of their property.

As a result, more and more communities are providing centralized oversight and/or assistance with many aspects of new onsite system installation and maintenance. Some communities also help property owners with the cost of repairing, replacing, or maintaining existing systems.

However, permit fees alone usually cannot provide adequate funding to begin and operate a well-developed and effective onsite management program. Therefore, communities are finding creative ways to provide these services for their residents.

Cluster Systems

One way communities have found to make wastewater system management more affordable in some areas is to encourage decentralized wastewater systems (cluster systems) in place of individual home onsite systems. Cluster systems are systems that two or more homes share. They often work well in housing developments and in neighborhoods with several homes and smaller lot sizes.

Cluster systems include treatment technologies, such as lagoons, sand filters, and community drainfields. There often is an onsite component to these systems, such as a septic tank or grinder pump, which the individual property owner or the community may own. These preliminary treatment units usually link to the system by alternative collection systems, such as small-diameter gravity sewers, pressure sewers, or vacuum sewers.

Cluster systems can be more cost-effective to manage than individual home systems because everyone connected shares operation, monitoring, and maintenance costs. Residents benefit because they share the cost of the treatment facility construction with their neighbors.

Depending upon their size, cluster systems may have a part- or full-time operator that the developer, homeowner association, community, or utility district employs to ensure that the system stays in good operating condition and that routine maintenance is performed.

Homeowners can take comfort in the fact that their system is being monitored and maintained and that someone is available to answer service calls and protect their investment.

For more about cluster systems, refer to the Fall 2000 issue of Pipeline *about decentralized wastewater treatment systems. Contact the National Small Flows Clearinghouse and request Item #SFPLNL23 and price information.*

Options for Funding Management Programs

Communities can find money for onsite system management programs from a variety of sources. The most popular funding avenues include:

- community savings (capital reserves),
- grants (state or federal),
- loans (state, federal, or local),
- bonds (state or local),
- property assessments,
- user fees and special fees,
- taxes, and
- fines.

Communities usually need more than one funding source depending upon the scope of their management program. For example, communities may need funding for initial program planning, as well as to construct systems and buildings (if needed). And when the construction phase is complete, additional funding will be needed to run the day-to-day operations of the program and to pay down the debt incurred from borrowing the initial funds.

Following are descriptions of some popular funding sources available to small communities for onsite/decentralized wastewater-related activities, including management. The legal organization or structure of the management program (public utility district, nonprofit organization, county health agency) may determine its eligibility for certain types of funding.

(*Editors Note*: The Fall 1999 *Pipeline* issue described at right offers a more comprehensive and detailed list of funding resources for communities.)

Community Savings

For those small communities lucky enough to have substantial capital reserves, obtaining loans and bonds for wastewater management projects is less of a challenge. Communities can use their savings to finance management program startup and planning activities, as well as to construct or repair systems and buildings. Capital reserves usually do not go toward operation and maintenance expenses or to pay the principal and interest from loans.

Grants and Loans

Even communities with substantial savings should examine additional sources of funding for onsite system management. Small communities often can obtain grants or loans from federal and state sources to help fund initial management program startup and facility construction.

Commercial lending institutions are another potential source, but they usually charge more interest. Grants and loans are not normally used to finance ongoing program operation expenses, other debts, or system maintenance.

Community Development Block Grant (CDBG) Program—The U.S. Department of Housing and Urban Development (HUD) funds the CDBG program, which provides annual grant money directly to 48 states and Puerto Rico. The states use the money to help small cities and rural areas with a variety of projects, including projects that improve community and onsite wastewater systems and protect public health and the environment. HUD requires that states use the majority of grant funds to benefit low- and moderate-income populations. Grants can cover 50 to 80 percent of project funds. Each state has its own eligibility requirements.

More information about the CDBG program is available from your state health agency or from HUD at (800) 998-9999. Visit its Web site at **www.hud.gov/progdesc/cdbgent.cfm**.

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Newsletter Lists Funding Sources

The Fall 1999 *Pipeline* issue focuses on helping small communities locate funding for wastewater projects. It includes detailed information about commonly-used sources of funding from the U.S. Environmental Protection Agency and other federal agencies, and it also lists less known avenues of funding, such as regional programs and nonprofit organizations.

In addition, this *Pipeline* includes information about funding available to homeowners wishing to install or repair their onsite wastewater treatment systems. A funding expert offers advice and a case study details how a small town persevered and secured funding for its wastewater project.

Although the focus of the issue is on funding projects, most of the information is useful to community leaders and residents looking for ways to fund onsite system management programs.

To order a copy of the Fall 1999 issue of Pipeline *(vol. 10, no. 4), contact the National Small Flows Clearinghouse (NSFC) and request Item #WWPLNL19 and price information. Or you may download the issue for free from the NSFC's Web site at* **www.nsfc.wvu.edu**.

Options for Funding Management Programs

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Clean Water State Revolving Fund (CWSRF) Program—The CWSRF is a low- or no-interest loan program the U.S. Environmental Protection Agency (EPA) administers. The program helps small communities finance water quality improvement activities and works something like a bank in each state. States receive EPA grants, which they match with 20 percent, and the states loan the money to communities for wastewater and other projects. As communities make payments back into the revolving fund, the state issues new loans to help other communities.

To qualify for a CWSRF loan, a project must meet both federal and individual state requirements. Communities can borrow from their state SRF program to fund onsite system installation, repair, or upgrades. Costs associated with onsite management programs, such as start-up costs and capital outlays (for example, for the purchase of trucks or buildings) also may be eligible.

For a list of state SRF contacts, call (202) 260-2268, fax (202) 260-1827, e-mail **srfinfo@epamail.epa.gov,** *or visit* **www.epa.gov/efinpage/srfcon.htm** *on the Web.*

Nonpoint Source Pollution Program—Authorized under section 319 of the Clean Water Act and funded by federal, state, and local contributions, this EPA program targets stormwater runoff and other sources of water pollution, including malfunctioning onsite systems. The program provides cost-share funding for individual and community systems and supports watershed assessment, planning, and management activities. Program funds have been used in the past to analyze local water quality and identify areas with failing onsite systems. The community used this information to provide cost-share and other assistance to repair or replace failing systems in these areas.

For more information, contact the Nonpoint Source Pollution Program at (202) 566-1255, or visit the EPA's Office of Wetlands, Oceans, and Watersheds Web site at **www.epa.gov/owow/nps/**.

U.S. Department of Agriculture Rural Development Programs—State Rural Development offices administer the programs described below, which provide loans and grants to low- and moderate-income residents or to local governments or management entities.

For a contact in your state, call Rural Development's national office at (202) 720-4323, or visit its Web site at **www.rurdev.usda.gov/**.

Rural Housing Service Single-Family Housing Program—This Rural Development program helps low-income individuals purchase homes through loans, grants, and loan guarantees. It also can help fund improvements to make homes more safe and sanitary. Eligible applicants may obtain as much as 100 percent financing to build, repair, renovate, or relocate a home, or to purchase and prepare sites, including providing water and wastewater facilities.

For more information, call Rural Housing Service's main office at (202) 720-4323, or visit its Web site at **www.rurdev.usda.gov/rhs/**.

Rural Housing Service Repair and Rehabilitation Loan and Grant Programs—Through these two programs, Rural Development provides money to low-income people for home repairs and improvements. For example, a family or senior citizen may apply to replace an outhouse with an onsite wastewater system and indoor plumbing. Loans of up to $20,000 (at one percent interest) and grants of up to $7,500 are available to eligible applicants.

For more information, call Rural Housing Service's main office at (202) 720-4323, or visit its Web site at **www.rurdev.usda.gov/rhs/**.

Rural Utilities Service (RUS)—This well-known Rural Development program assists local governments and public or nonprofit utilities, including wastewater management districts, in communities with populations of 10,000 or less. RUS provides loans, grants, and loan guarantees to municipalities, counties, special-purpose districts, Indian tribes, and other nonprofit public entities. Various onsite management entities may be eligible. They also provide technical assistance and training grants.

For more information, contact RUS's main office at (202) 720-9583, or visit its Web site at **www.usda.gov/rus**.

Bonds

After communities have explored all the sources of low-interest loans and grants available to them, they may wish to consider issuing bonds. Bonds can help fund the construction and renovation of buildings or systems, system inspections, permitting, and planning activities. Communities do not use bonds to fund principal and interest on other loans or program operation or maintenance.

Bonds are similar to other types of loans in that the money a community receives must be paid back, with interest, according to a fixed schedule. Interest rates vary depending upon the type of bond and market influences, and like other loans, these rates can be fixed or variable.

However, bonds tend to be more complicated and expensive for communities to use than other sources of funding—for example, some bond issues require communities to hold special elections. However, the benefits of using low-interest rate bonds may outweigh the disadvantages for communities.

Before communities or onsite system management entities begin the process of issuing bonds, they

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Funding Source Advantages and Disadvantages*

Funding Source	Description	Advantages	Disadvantages
Loans	Money lent with interest, which can be obtained from federal, state, and commercial lending institutions.	State and federal agencies often can issue low-interest loans with a long repayment period. Loans can be used for short-term financing while waiting for grants or bonds.	Loans must be repaid with interest. Lenders may require certain provisions (e.g., power to levy taxes to assure ability to repay the debt). Commercial loans have higher interest rates and may require adequate collateral.
Grants	Funds awarded to pay for some or all of a community project.	Funds need not be repaid. Small communities may be eligible for many different grants to build or upgrade their environmental facilities.	Applying for and managing grants requires time and money. Sometimes grant-imposed wage standards apply to an entire project, even if the grant is only partially funding the project. Some grants have material use and design requirements that exceed local standards. (Grants may result in higher costs.)
General Obligation Bonds	Bonds backed by the full faith and credit of the issuing entity. Secured by the taxing powers of the issuing entity. Commonly used by local governments.	Interest rates are usually lower than those of other bonds. Offers considerable flexibility to local governments.	Community debt limitations may restrict use. Voters often must approve use of these bonds. Usually used for facilities that do not generate revenues.
Revenue Bonds	Bonds repaid by the revenue of the facility.	Can be used to circumvent local debt limitation.	Do not have full faith and credit of the local government. Interest rates are typically higher than those of general obligation bonds.
Special Assessment Bonds	Bonds payable only from collection of special assessments. Property taxes cannot be used to pay for these.	Removes financial burden from local government. Useful when direct benefits can be readily identified.	Can be costly to individual landowners. May be inappropriate in areas with non-uniform lot sizes. Interest rate may be high.
Bond Bank Monies	States use taxing power to secure a large bond issue that can be divided among communities.	States can get the large issue bond at a lower interest rate. The state can issue the bond in anticipation of community need.	Many communities compete for limited amount of bond bank funds.
Certificates of Participation (COP)	COPs can be issued by a community instead of bonds. COPs are issued to several lenders that participate in the same loan.	Costs and risks of loan spread out over several lenders. When allowed by state law, COPs can be issued when bonds would exceed debt limitations.	Requires complicated agreements among participating lenders.
Notes	A written promise to pay a debt. Can include grant and bond anticipation notes.	Method of short-term financing while a community is waiting for a grant or a bond.	Receipt grant money must be certain. Bond notes are risky because voters must approve general obligation bonds before they are issued. Voter support must be overwhelming.
Property Assessments	Direct fees or taxes on property. Sometimes referred to as an improvement fee.	Useful where benefits from capital improvements are identifiable. Can be used to reduce local share debt requirements for financing. Can be used to establish a fund for future capital investments.	Initial lump sum payment of assessment might be a significant burden on individual property owners.
User Fees	Fee charged for using the wastewater system.	Generates steady flow of revenue. Graduated fees encourage water conservation.	Flat fees discourage water conservation. Graduated fee could discourage industries or businesses that use high volumes of water from locating in an area.
Service Fees	Fee charged for a specific service, such as pumping the septic tank.	Generates funds to pay for operation and maintenance. Fees not imposed on people not connected to the system.	Revenue flow not always continuous.
Punitive Fees	Charges assessed for releasing pollutants into the system.	Generates revenue while discouraging pollution.	Generation of funds not reliable. Could encourage business to move or engage in illegal activities to avoid fees. Could cause opposition to operation and maintenance.
Connection Fees	Charges assessed for connection to existing system.	Connection funded by beneficiary. All connection costs might be paid.	May discourage development.
Impact Fees	Fees charged to developers.	Paid only by those who profit. Funds can be used to offset other costs.	May reduce potential for development.

*Source: U.S. Environmental Protection Agency (1982, 1994).

Options for Funding Management Programs

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Q: How Much Does It Cost To Issue Bonds?

A: According to Aaron Rudio, associate vice president for public finance with D. A. Davidson & Company, these costs vary by region. They also vary according to the type and size of bond issue and the method in which they are sold.

With these caveats in mind, Rudio provided the following "lower-end" estimates of some bond-related fees:

- Underwriter's discount—1 to 2 percent of the bond principal;
- Bond counsel—$5,000;
- Financial advisor—$5,000;
- Printing disclosure documents and other materials—$2,000;
- Miscellaneous expenses (travel, mailing costs)—$500.

"These figures are the lower end of the fee scale," Rudio stressed. Even if a system cuts corners, "it would be difficult to get the bonds issued for less than $10,000 (not counting the underwriters discount)."

He added that these and other bond-related costs aren't necessarily less for smaller bond issues.

Source: P.J. Cameon. 1996. "Construction Bond Q&A." Morgantown, WV: National Drinking Water Clearinghouse. *Water Sense.* vol. 2. no. 4. (Fall). Item #WSENSE08.

would be wise to seek help and free advice from state agencies and state bond banks or pools (if available). State bond banks may be able to offer better interest rates to communities.

After exhausting all avenues of free advice, the management program should hire a professional bond counsel who can offer legal and tax advice concerning the bond sale. Many bond counsels belong to the National Association of Bond Lawyers. In addition, any financial advisors who aid communities and bond underwriters should have Series 7 registration with the National Association of Securities Dealers.

There are several types of bonds communities can use to fund onsite system management activities. Following are descriptions of some of the most common.

General Obligation Bonds—Local governments issue and guarantee these bonds, often backed by property assessments. They are considered low-risk, and therefore, usually have lower interest rates than other types of bonds.

Another advantage of general obligation bonds is that they usually have long-term maturities, which means they can be paid back over many years (15 to 40, for example).

The amount a management program can borrow using a general obligation bond is restricted by the local government's credit limit. Management programs can use fees, fines, or other program revenues to pay back general obligation bonds.

One disadvantage of general obligation bonds is that communities usually must hold a special election to issue them. This complicates the process and adds to the expense of using them as a source of funding.

Short-Term Bonds—Communities use these bonds (also called anticipation notes) to cover expenses while awaiting promised funding from government or other reliable sources. These bonds often must be repaid within a year.

Revenue Bonds—If a management program expects to generate revenue from user fees, dues, fines, or other sources, revenue bonds may be a viable funding option. Local governments issue these bonds, but they tend to have slightly higher interest rates than general obligation bonds. However, the amount a management program can borrow is not restricted by the community's debt limit. Another advantage of revenue bonds is that they don't usually require an election to be issued.

Special Assessment Bonds—One advantage of using special assessment bonds to fund onsite system management is that the burden of repaying the debt goes directly to the people who benefit from the program. These bonds are repaid by special assessments on all property within a certain area (for example, an onsite wastewater management district). Problems can arise, however, if property owners protest their new tax assessment.

Special assessment bonds tend to have higher interest rates than general obligation bonds; however, a special bond election may not be required. Also, the amount of these bonds is not restricted by a community's debt limit.

(*Editor's Note:* Most of the bond information presented here is based upon an excellent series of articles, which appeared in the National Drinking Water Clearinghouse (NDWC) publication *Water Sense*.

Although *Water Sense* is no longer in print, back issues of the Fall 1996 (Item #WSENSE08) and Spring 1997 (Item #WSENSE10) issues are available free of charge by contacting the NDWC at (800) 624-8301. Back issues also are available online at **www.ndwc.wvu.edu**.)

Fees, Taxes, and Other Revenues

The majority of funding resources described so far in this issue are more appropriate for funding the initial planning and startup

of a management program, and such activities as the inspection, construction, or renovation of buildings and systems. But how do communities finance the day-to-day operations of an onsite management program, such as personnel costs, record-keeping, and system inspection and maintenance?

One common way to finance these costs is through user fees. Property owners often must pay fees to the onsite system management entity based upon such factors as household water usage, the type of system they have, and the cost of annual inspections and maintenance.

The challenge for the management entity is to structure user rates so that they are equitable and affordable for residents yet still generate enough income to help support program operations.

Management programs also often rely on special taxes and fees for income, such as property taxes and fees charged to developers. Another less-reliable revenue source are fines collected by enforcing local wastewater regulations.

Involve the Public

One of the most important things an onsite management program can do to ensure its own success is to keep the public involved.

For example, a good public education campaign can make or break a bond election or a property assessment initiative. For example, the community needs to remind the public why effective onsite system management is important and how it can protect families, homes, the environment, and bank accounts.

The National Small Flows Clearinghouse (NSFC) offers a wealth of materials for public education. Refer to the contact list at right and the products listed on page 8 for more information.

New Mexico Program Operates On User Fees

Everyone who visited Pena Blanca, New Mexico, in the early 1980s quickly learned the town had a wastewater problem. In 1990, that all changed when the small community obtained federal and state grants to renovate or replace onsite systems.

One unusual aspect of Pena Blanca's project was that onsite system management was part of it from the beginning. According to Theresa Armijo, general manager of Pena Blanca's water and sanitation district (WSD), both the state and the contractor recommended management when they discovered that some septic tanks had never been pumped and that septage had been illegally dumped in the community landfill.

"Now the WSD requires all septic tanks to be pumped every two years," says Armijo. The WSD contracts with a pumper/hauler from Albuquerque, and Armijo oversees their work, answers service calls, and educates homeowners about their systems.

Rates for the program are structured according to septic tank size and whether homeowners opt to contract maintenance on their own.

"Residents who fully participate in the program are charged $9.01 per month for a septic tank with a capacity less than 1,000 gallons or $10.60 per month for a 1,000- to 1,200-gallon tank," say Armijo. "Homeowners or businesses with septic tanks larger than 1,200 gallons are charged more, the highest rate being $19.87 per month."

Homeowners who contract maintenance on their own are charged a $4.07 monthly "standby fee" and must provide documentation showing that pumping took place. According to Armijo, homeowners who opt out of the program don't really save any money.

For more information about Pena Blanca's onsite system management program, contact Armijo at (505) 465-2851.

CONTACTS

National Small Flows Clearinghouse (NSFC)

The NSFC offers technical assistance and free and low-cost information about wastewater technologies for small communities. Only a few of the NSFC's many resources and services are mentioned in this newsletter. Call the NSFC at (800) 624-8301 or (304) 293-4191 or visit our Web site at **www.nsfc.wvu. edu** for more information or to download a catalog of our products and services.

EPA Environmental Finance Centers

The U.S. Environmental Protection Agency (EPA) has established seven Environmental Finance Centers at universities across the country to help communities find creative ways to fund environmental programs. Contact Vera Hannigan at (202) 564-4994 for information. Or you may visit the Environmental Finance Program Web site at **www.epa.gov/efinpage/**.

National Onsite Demonstration Program (NODP) Phase IV

Phase IV of the NODP is committed to helping America's small communities determine how to effectively manage all aspects of their onsite wastewater activities. The program is developing case studies and materials to help communities fund onsite management programs. NODP Phase IV also is producing public education materials to help community leaders effectively communicate the importance of onsite system management. For more information, contact Graham Knowles, program coordinator, at (800) 624-8301 or (304) 293-4191, or visit the NODP IV Web site at **www.nesc.wvu.edu/nodp4/**.

NSFC RESOURCES AVAILABLE

To order any of the products below, call the National Small Flows Clearinghouse (NSFC) at (800) 624-8301 or (304) 293-4191, fax (304) 293-3161, e-mail **nsfc_orders@mail.nesc.wvu.edu**, *or write to NSFC, West Virginia University, P.O. Box 6064, Morgantown, WV 26506-6064. Be sure to request items by number and title. A shipping and handling charge applies to all orders. Please request price information.*

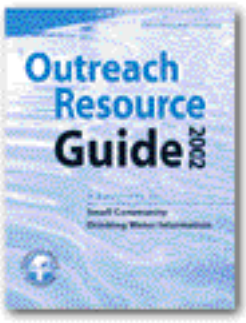
Pipeline Issues Discuss Onsite Wastewater System Management

Two previous issues of *Pipeline* focus on centralized management programs for onsite systems. The first, *Management Programs Can Help Small Communities*, (Item #SFPLNL05) explains onsite system management and types of management entities. It features two case studies from small communities. The second, *Planning Is Essential for Onsite System Management* (Item #SFPLNL25), discusses how communities plan and begin management programs.

CD-ROM Offers the Best of the NSFC

This CD-ROM titled *Wastewater Resources for Small Communities* includes articles, documents, fact sheets, brochures, and a complete catalog of NSFC products. Request Item #WWCDGN162.

NDWC Outreach Resource Guide



The National Drinking Water Clearinghouse (NDWC) offers this directory, which lists more than 80 federal agencies and national organizations with water-related interests. Many of these contacts also help small communities with wastewater-related issues. Request NDWC Item #DWBKGN36.

Hardship Grants Program for Rural Communities

This two-page fact sheet details the U.S. Environmental Protection Agency's Hardship Grants Program and outlines criteria for eligibility and where to find additional information. Request Item #FMFSFN27.

Clean Water State Revolving Fund

This two-page fact sheet highlights the various needs eligible for funding under the Clean Water State Revolving Fund Program. Request Item #WWFSFN06.

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